



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,358	10/24/2003	Chao-Cheng Lu	14004 B	2590
36672	7590	10/19/2005	EXAMINER	
CHARLES E. BAXLEY, ESQ. 90 JOHN STREET THIRD FLOOR NEW YORK, NY 10038			THOMAS, LUCY M	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/693,358	<b>Applicant(s)</b> LU, CHAO-CHENG	
	<b>Examiner</b> Lucy Thomas	<b>Art Unit</b> 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of a certified copy of the 092112269 application referred to in the oath or declaration or in an application data sheet. If this copy is being filed to obtain the benefits of the foreign filing date under 35 U.S.C. 119(a)-(d), applicant should also file a claim for such priority as required by 35 U.S.C. 119(b). If the application being examined is an original application filed under 35 U.S.C. 111(a) (other than a design application) on or after November 29, 2000, the claim for priority must be presented during the pendency of the application, and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior foreign application. See 37 CFR 1.55(a)(1)(i). If the application being examined has entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the claim for priority must be made during the pendency of the application and within the time limit set forth in the PCT and Regulations of the PCT. See 37 CFR 1.55(a)(1)(ii). Any claim for priority under 35 U.S.C. 119(a)-(d) or (f) or 365(a) or (b) not presented within the time period set forth in 37 CFR 1.55(a)(1) is considered to have been waived. If a claim for foreign priority is presented after the time period set forth in 37 CFR 1.55(a)(1), the claim may be accepted if the claim properly identifies the prior foreign application and is accompanied by a grantable petition to accept an unintentionally delayed claim for priority. See 37 CFR 1.55(c).

### ***Drawings***

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because some of the block elements in Figure are not consistent with the specification. For example, the specification recites "an AC input control circuit 20" on page 3 line 16, however, Figure 1 shows element 20 as a half wave rectifier. The specification recites "a timing switch circuits 50" on page 3, line 17, however, Figure 1 shows element 50 as alternating current phase sampling circuit. The specification recites "a decoding counting circuit 60" on page 3, line 17, however, Figure 1 shows element 60 as a phase start circuit. Figure 2 should be redrawn to identify the various elements. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities: The specification recites "a tripler rectifying filter circuit 30" on page 3, line 16, page 4, line 1, and page 6, line 7, whereas Figure 1 shows element 30 as doubler rectifying filter circuit. Recitation of "The tripler rectifying filter circuit 30 consists of the three rectifying diodes 31, 32, 33, the two electrolytic capacitors 34 and 35, and the electrolytic

Art Unit: 2836

capacitor 81 in the energy storage circuits 80" on page 6, lines 7-9 of the specification is in conflict with Figures 1 and 2. Appropriate correction is required in the Specification and/or Figures to make matters more clear and correct.

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-6 of U.S. Patent No. 6,880,740 further in view of Shiue et al. (US 6,753,673) and Ward et al (US 4, 558,391). Although the conflicting claims are not identical, they are not patentably distinct from each other. Claim 1 of the current invention and Claims 1, 3, and 5 of US Patent No. 6,880,740 discloses a impact force enhancing device of an electric nailer, comprising an AC power source, an AC input control circuit, a tripler rectifying filter circuit, a DC steady state circuit, a timing switch circuit, a decoding counting circuit, an impulse oscillation circuit, an energy storage circuit, a solid-state switch circuit and an electromagnetic coil. The

Patented Claims do not disclose multiple energy storage circuits or multiple solid-state switch circuits. However, it would have obvious to provide multiple energy storage circuits and multiple solid-state switch circuits to obtain maximum packing efficiency of available capacity to make the impact force enhancing device more compact. Claim 1 of the Application differs from Claim 1 of the Patent as the elements are recited using different names or the recited elements are disclosed in dependent Claims. For example, a decoding counting circuit disclosed in Claim 1 of the Application, is disclosed in Claim 5 of the Patent as a timing control module which can be all types of timer IC microprocessor, and analog device combinations, and an impulse oscillation circuit in the Application is identified as a reset enable single shot trigger circuit in the Patent. Also, Claim 1 of the Patent fails to disclose a multi-stage impact force enhancement for the device. However, Shiue teaches a multi-stage impact force enhancement device. It would have been obvious to one of ordinary skill in art to modify the impact enhancing device of the invention to a multi-stage impact enhancement device as taught by Shiue to provide an evenly distributed work required for the impact track of a conventional electric nailer.

Claim 1 of the Application does not disclose a first switch, a second switch, a protection circuit, a relay or an SCR and two voltage divider resistors, as in Claim 1 of the Patent. However, Ward et al. discloses a solid state switch circuit which includes a first switch 141, a second switch 142, a protection circuit (see diode in Figure 5A), a relay 156, an SCR and two voltage divider resistors (see 137 in Figure 5A), the SCR contains an anode connected to one port of electromagnetic coil of the electromagnetic

coil device 119 and cathode connected to the negative terminal of an energy-storage circuit 125, each of the two voltage divider resistors contains a first port connected to a normally opened connector of the relay 156, and a second port connected to the gate of the SCR, wherein: when the two voltage divider resistors are subjected to voltage, the SCR is conducted, so that the energy storage capacitor 125, of the energy storage circuit discharges to the electromagnetic coil device, thereby generating an electromagnetic force (Column 9, lines 60-67). It would have been obvious to those skilled in the art at the time the invention was made to provide the configuration of Ward in the circuit to provide uniformity of stapler operation by insuring the voltage level of charging is such that the operation of the apparatus is immune to line source voltage fluctuations and to improve safety of the device.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 -7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (US 4,558,391) in view of Shiue (US 6,753,673). Regarding Claim 1, Ward discloses a impact force enhancing device (Figure 4-6) of an electric nailer, comprising an AC power source, an AC input control circuit 129, a DC steady state circuit 126, a

Art Unit: 2836

decoding counting circuit 160, a timing switch circuit 127, an impulse oscillation circuit 153, 154, multiple energy storage circuits (125 and capacitors shown Figure 5A), multiple solid-state switch circuits 136, 138, and an electromagnetic coil 119 (Column 9, lines 9-45, Column 11, lines 50-67, Column 12, lines 1-2, 64-67). Ward fails to disclose a tripler rectifying filter circuit and multi-stage impact force enhancement. Use of rectifying filter circuit to transform AC power source to multiple times DC voltage is well known in the art as supported in Applicant's specification on page 1, lines 11-14 in the Description of the Related Art. Shiue discloses a multi-stage impact force device for an electric nailer by charging energy storage capacitors in parallel and discharging them serially to enhance the impact force (Figure 2, Column 2, lines 26-31, Column 3, lines 12-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the impact force enhancing device of Ward to a multi-stage impact enhancing device by as taught by Shiue to provide an evenly distributed work required for the impact track of a conventional electric nailer.

Regarding Claim 2, Ward and Shiue disclose the apparatus as recited in Claim 1, Shiue discloses that energy storage electrolytic capacitors 207, 208 of each stage is triggered to serially discharge a voltage to the electromagnetic coil 209, which necessarily produces a larger impact force with less capacitance. Regarding Claim 3, Ward and Shiue disclose the apparatus in the above configuration, wherein the tripler rectifying filter circuit can transform the voltage of the AC power source into three times DC voltage. Regarding Claim 4, Shiue does not teach a third time electrolytic capacitor to form a three times voltage, to function as an energy storage capacitor for discharging



Art Unit: 2836

the voltage to the electromagnetic coil. However, it would have been obvious to include a third time electrolytic capacitor to increase the impact force to provide an evenly distributed work required for the impact track of a conventional electric nailer.

Regarding Claims 5-7, Shiue discloses a first capacitor energy storage 207 and solid state switch circuit S1, S4 to discharge the voltage to the electromagnetic coil as recited in Claim 5, and a second capacitor energy storage 208 and solid state switch circuits S2, S4 to discharge the voltage to the electromagnetic coil as recited in Claim 6, but fails to disclose a third capacitor energy storage and solid state switch circuits to discharge the voltage to the electromagnetic coil as recited in Claim 7. It would have been obvious to those skilled in the art to include a third capacitor energy storage and solid state switch circuits to discharge the voltage to the electromagnetic coil to further increase the impact force.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy Thomas whose telephone number is 571-272-6002. The examiner can normally be reached on Monday - Friday 8:00 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2836

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LT

October 05, 2005



PHUONG T. VU  
PRIMARY EXAMINER